



CONSTRUCTION PHASE MONITORING REPORT 1

ESIA for upgrading of infrastructure at
Zone II RWMF
R. Vandhoo

Report Prepared by:

Ahmed Hassaan Zuhair
Ahmed Shan

Proponent's Name:

Ministry of Environment, Climate Change and
Technology

November 2021



Maldives
Clean
Environment
Project

Contents

DECLARATION OF THE AUTHOR	2
1. Introduction.....	3
1.1. The Chronology of the Environmental and Social Assessment Process Followed	3
1.2. Objectives and Content of the Monitoring Report	3
1.3. Report Preparation.....	4
2. Status of Sub-Projects Implementation	5
3. Implementation of Mitigation Measures	10
4. Details of Vegetation Cleared.....	21
5. Grievances	24
6. ESIA Monitoring.....	26
6.1. Seawater Quality	28
6.2. Coral Cover Diversity	29
6.3. Fish Community.....	36
6.4. Vegetation line and Shoreline	37
7. Conclusion	38

DECLARATION OF THE AUTHOR

I hereby declare that the information provided in this monitoring report are true, complete and accurate to the best of my knowledge and is based on the information available at the time of writing.



Ahmed Hassaan Zuhair
Environmental and Social Safeguards Specialist
Maldives Clean Environment Project
Ministry of Environment, Climate Change and Technology

1. Introduction

An Environmental and Social Impact Assessment (ESIA) was prepared in January 2019 for the proposed upgrading of infrastructure at Zone II Regional Waste Management Facility (RWMF), situated in Raa Vandhoo. The ESIA consultant of the report was Land and Marine Resource Ground Pvt. Ltd (LaMer) and Mr. Hussein Zahir was the lead consultant. The report was approved by the Environmental Protection Agency (EPA) on 14 February 2019 and the World Bank on 10 June 2019. The decision statement issued by the EPA is provided in **Annex 1**.

This is the first construction phase monitoring report of the subject ESIA.

1.1. The Chronology of the Environmental and Social Assessment Process Followed

The developments proposed under the 2019 ESIA corresponds to the additional interventions introduced by and financed under Maldives Clean Environment Project (MCEP), which were mostly for residual waste storage, accommodation facilities, road extensions and upgrading of the water storage and fuel storage capacities.

The original ESIA of the facility was prepared in 2012 financed as part of the World Bank financed Maldives Environmental Management Project (MEMP), implemented between 2008 to June 2016. The original ESIA was for the establishment of the Vandhoo-RWMF based on the BPEO and Feasibility Study for the Vandhoo RWMF. The ESIA was cleared by the EPA and the World Bank in 2013. The EPA of Maldives issued a decision note on 31st January 2013 and the World Bank approved the report in August 2013.

An addendum to the 2019 ESIA is currently being prepared to address the upgrading of ancillary facilities at the RWMF that has been identified via an assessment of operational needs at the site conducted under the MECF project and updates from the Original Master Plan for the RWMF. This primarily includes changing the earlier location proposed for the new fuel storage tanks to a location closer to the incinerator and the powerhouse, temporary fuel storage, and minor extension to the road network.

1.2. Objectives and Content of the Monitoring Report

Although the major interventions proposed under the 2019 ESIA are still in progress (such as RO plant and water network) or yet to commence (such as the road network and fuel storage tanks), the World Bank has requested for a first monitoring report focused on the marine components of the monitoring programme. However, this report would also reflect on the level of the implementation of the mitigation measures in reference to the sub-projects in progress and that are already completed. **Table 1** of Section 2 highlights the current implementation status of these sub-projects.

Marine investigations were carried out from 23 – 25 September 2021 lead by Surveyor, Mr. Ahmed Shan. As part of this, the reef (coral cover and fish community) from 2 locations and shoreline from high tideline, low tideline and vegetation line were monitored. Additionally, seawater quality was analysed from 3 locations.

Groundwater quality testing was omitted from monitoring since the addendum to the 2019 ESIA currently being prepared covers this. Operational phase monitoring reports are being submitted by WAMCO to EPA on a monthly basis through a tool developed by MCEP via KoBo Toolbox application.

1.3. Report Preparation

This report is prepared by Mr. Ahmed Hassaan Zuhair, the Environmental and Social Safeguards Specialist of MCEP, who has a Master Degree in Urban and Environmental Planning and more than 15 years of professional experience in the field of Environment.

All technical surveys and data processing were carried out by Mr. Ahmed Shan, Project Manager of UNESCO Baa Atoll Biosphere Reserve Review Project, who has a Bachelor of Surveying and Spatial Sciences, and more than 15 years of professional experience in the field of Environment. The CV of the author and surveyor can be provided on request.

The author and the surveyor would also like to acknowledge the support received from Mr. Abdul Raheem Mohmed (Zone II project Coordinator, MCEP) in carrying out the field investigations.

2. Status of Sub-Projects Implementation

Table 1 provides an update of the current implementation status of the sub-project activities covered in the 2019 ESIA.

Table 1 Status of Implementation of the proposed activities

#	Activity	Funding Agency	Status	Contractor	Expected date of commencement	Expected date of completion	Additional Comments
1	Extension of existing waste processing bunker (to accommodate for installation of sorting line)	World Bank	Ongoing	LF Construction Pvt Ltd.	Q3 of 2021	Q1 of 2022	<p>To accommodate for the installation of the sorting line currently at procurement stage. The existing fuel storage tanks are located in this area. So, the building can only be completed once the existing tanks are decommissioned owing to potential risks involved.</p> <p>Decommissioning of existing fuel storage tanks can only commence after the approval of the ESIA addendum, as the proposed location of the fuel farm in the 2019 ESIA is planned to be changed.</p> <p>Temp fuel storage will also be covered in ESIA addendum to be prepared.</p>
2	Construction of additional waste storage bunker	World Bank	Completed	LF Construction Pvt Ltd.	Q3 od 2020	Q4 of 2021	To increase inert waste storage capacity of the plant.
3	Construction of hazardous waste storage facility	OFID	Planned	Not Selected	Q4 of 2022	Q4 of 2023	Planned activity under OFID Project. To temporarily store any HW received at the

							facility until transfer to the central HWM facility that is being developed at the Zone III RWMF (Thilafushi) through POPS project.
4	Construction of proposed recycling facility with storage for recyclables	OFID	Planned	Not Selected	Q4 of 2022	Q4 of 2023	Planned activity under OFID Project.
5	Construction of new staff quarters (accommodation) with mess	IRENA/ADFD	Procurement stage	Not Selected	Q4 of 2021	Q3 of 2022	Re-tendered due to unsatisfactory responses. To be completed through IRENA/ADFD project.
6	Extension of utility building (to accommodate additional genset)	World Bank	Completed	NASA Link Pvt Ltd.	Q3 of 2019	Q3 of 2020	After completion of the building, the genset has also been supplied, installed, and commissioned.
7	Guard house	World Bank	Completed	Interlock Constructions Pvt. Ltd.	Q3 of 2019	Q1 of 2020	Completed
8	Weighbridge	World Bank	Procurement Stage	Not Selected	Q4 of 2021	Q1 of 2022	At procurement stage
9	Construction of store room (for spares)	World Bank	Completed	Interlock Constructions Pvt. Ltd.	Q3 of 2019	Q1 of 2020	Completed
10	Construction of additional water tanks (250 m3 x 2 nos.)	World Bank	Ongoing	Precision Engineering Services (Pvt) Ltd.	Q3 of 2021	Q4 of 2021	This is in addition to the 3 existing water tanks and is being carried out under the same contract as the RO plant.
11	Relocation and upgrade of fuel storage (100 m3 x 2 nos.)	World Bank	Pending	Not Selected	Q1 of 2022	Q3 of 2022	The location marked in the 2019 ESIA is recommended to be changed to an area closure to the WtE plant. This change will be reflected in the ESIA addendum to be prepared.

							Pending completion of ESIA addendum.
12	Rehabilitation of the existing landfill and leachate pond (with pumps)	GoM	Landfill pending / fixing of pumps completed	Not Selected	Q1 of 2022	Q3 of 2022	<p>Landfill rehabilitation is included in the Government Budget proposed for 2022.</p> <p>The landfill is damaged due to the operator not complying with the operational requirements. Hence, the exiting material at the landfill needs to be removed and the landfill relined. Planned to commence as soon as the operator clears the landfill.</p> <p>The pumps which facilitate the flow of leachate from the landfill to the leachate pond was not function at the time of the preparation of the 2019 ESIA. It has now been fixed and properly function according to the WAMCO's chief engineer.</p>
12	Upgrading/upscaling of existing fire protection system (include additional buildings)	IRENA/ADFD	Pending	Not Selected	Q1 of 2022	Q4 of 2022	<p>The existing fire protection system is designed for the initial 15-ha, which needs to be expanded further to consider for the proposed new developments covered in the master plan.</p> <p>Pending finalization of Fire protection system design from MNDF.</p>

13	Upscaling of existing RO plant (with borehole) and water network	World Bank	Ongoing	Precision Engineering Services (Pvt) Ltd.	Q3 of 2021	Q4 of 2021	<p>The existing 15m³/day capacity RO plant is proposed to be upgraded to a 50m³/day capacity plant owing to the proposed expansion of the facility.</p> <p>Contract mobilized and works are in progress.</p> <p>The location of the brine outfall proposed at south side of Vandhoo in the 2019 ESIA has been changed to harbour area due to budgetary limitations. This has been communicated with EPA and the approval received through their letter 203-ECA/438/2020/52 (24 August 2020) provided in Annex 2</p>
15	Establishment sewer network to the accommodation blocks	GoM	Planned	Not Selected	Q2 of 2022	Q3 of 2022	<p>A septic tank was proposed to be developed instead of the centralised sewerage system covered in 2019 ESIA due to budgetary limitations that was going to be addressed in the ESIA addendum currently being prepared. However, based on the stakeholder consultation with URA and WATSAN since release of filtered effluents to the ground are not allowed under any circumstances in industrial islands (irrespective of being domestic sewage from less than 50 people) as per the Water Act 2020, the scope has been changed back to a central system.</p>

16	Extension of roads	GoM	Planned	Not Selected	Q2 of 2022	Q3 of 2022	<p>2012 ESIA only covers roads in the 15-ha initially developed.</p> <p>Major roads network required for the proposed expansion is covered in 2019 ESIA. Road extension works have not commenced yet. Negotiations are underway with Road Development Corporation (RDC).</p> <p>Minor extensions / connections to the road network in 20219 ESIA are required, which will be included in the EISA addendum to be prepared.</p>
----	--------------------	-----	---------	--------------	------------	------------	--

3. Implementation of Mitigation Measures

Table 2 reflects on the level of implementation of mitigation measures in reference to the on-going and completed sub-projects at the time of report submission.

Table 2 Implementation of Mitigation Measures

Activity	No.	Potential impacts	Mitigation Measures	Location/ Time frame	Status (✓ / X)	Comments
CONSTRUCTION PHASE						
Maintenance and refueling of project support vehicles	PC3	Accidental spills of hydrocarbon on and under the island associated with motorized support-vehicles	Construct concrete line maintenance areas with capacity to collect and use-recycle used hydrocarbons. Ensure proper maintenance of machinery, appropriate workshop facilities, appropriate handling of all waste (store in a safe place for later removal / incineration in the incinerator).	Maintenance areas/ Prior, during and after construction phase	N/A	<i>Vehicles were not used for any of the sub-project. Wheelbarrows were mainly used to transfer materials from the harbour to the site, while the wheel loader operated by WAMCO in Vandhoo were utilised by some contractors to transfer heavy items such as metal bars and roofing sheets.</i>
Construction activities	EO4 EO5	Air pollution and noise impacts	Avoid unnecessary operation of machinery and equipment. Limit use of heavy machinery to project site only. Regular maintenance of machinery	Whole islands/ during construction phase	Complied	<i>Heavy vehicles or machinery were not brought to the site. Only cement mixing machines were used by the contractors. Working hours are restricted only to daytime until 18:00 hours.</i>
Clearing of vegetation in the project area and	BE5	Vegetation removed from most of the site	Erosion and dust control devices in place prior to construction. Ensure protection of the vegetation buffer zone along the coast (50 m wide)	RWMF site/ During construction	Complied	<i>Sites of most of the on-going and completed activities were located in and around the periphery of the existing 15ha operational</i>

<p>guest accommodation</p>			<p>and around the wetland. The buffer should be 70 m in the area where the wetland is found. Coconut palms, if possible, to be moved from the cleared area to the buffer area. Vegetation falling outside project boundary shall not be harmed in any way.</p>		<p><i>area, hence only a few vegetations were required to be cleared for site preparation.</i></p> <p><i>No vegetation from the buffer zone were removed.</i></p> <p><i>Only the vegetation found within the project boundaries were removed, while the surrounding vegetation remains intact and is not harmed.</i></p> <p><i>Section 4 for provides details of vegetation removed from each sub-project.</i></p> <p><i>Due to the limited non-vegetated area at Vandhoo, a suitable land for 2:1 replantation and/or vegetation translocation has been identified from recently reclaimed area of R. Dhuvaafaru, with Island Council written confirmation acquired.</i></p> <p><i>Mandatory 2:1 replantation of the vegetation removed from the subproject plots referenced in Section 4 will be performed during road development phase of the project.</i></p> <p><i>Changes to the proposed roads have been made as per the recommendation of the 2019 ESIA and the decision statement of EPA. As such, the width of the roads has been</i></p>
----------------------------	--	--	--	--	--

						<p><i>reduced from the initially proposed 12m to 10m. To facilitate this, as agreed with EPA, the pavement of one side of the roads are removed, whereby retaining main trees in that 2m width of the roads. As such only shrubs will be removed at this area. making a green pathway (dirt pathway while keeping the major trees) on one side of the roads. Annex 3 provides the revised road cross section.</i></p>
Overall construction and operation of the project	BE6	Changes in turtle nesting patterns due to changes in beach areas due to construction, noise and lights	<p>Document the relative importance of the beaches as nesting areas for each turtle species, if considered important, take measures such as infrared lights at night, turtle protection measures. No trespassing signs shall be enacted at the turtle conservation area and the area should not be disturbed by any means. Any exploitation, if reported shall be punished.</p> <ul style="list-style-type: none"> • Construction equipment must not be allowed to operate on the beach, remove sand from the beach, or in any way degrade nesting habitat. • Ensure that no beach lights are erected on the beach. 	Turtle conservation area	Complied	<p><i>Heavy vehicles were not operated in the island by the contractor for material transfer from harbour to this site. No lights were erected as construction activities are restricted to only day time.</i></p> <p><i>Therefore, turtles and their nesting sites were not impact by the project.</i></p> <p><i>The contractors were briefed about Vandhoer beach being a turtle nesting site and the turtle conservation protocols that their workers are required to adhere to. The company and individual code of conducts were attained from all the contractors and their workers designated for the project, which strongly emphasises on turtle conservation protocols and also specifies the sanctions that will be imposed in case of a</i></p>

			<ul style="list-style-type: none"> • Implement, enforce, evaluate lighting regulations or other lighting control measures where appropriate - Shielding of the light source, screening with vegetation, placing lights at lowered elevations and in some cases the use of limited spectrum low wavelength lighting (e.g. low-pressure sodium vapor lights) are possible solutions to beach lighting problems. • Ensure that structures do not block the turtle's access to the beach, change beach dynamics, or encourage human activities that might interfere with the nesting process. • Ensure that vehicular driving on nesting beaches are prohibited. • Reduce directed take of turtles and harvesting turtle eggs through conducting public education and information sessions to the staffs. • Ensure protection of the vegetation buffer zone along the coast (50 m wide). 			<p><i>breach. The standard code of conduct used by the project is provided in Annex 4.</i></p>
Road traffic		Risk of accidents as construction works	Enact traffic signage on the roads where lanes cross over. Set the	Construction site/ During	Complied	<p><i>Heavy vehicles were not used by the contractors for material transfer.</i></p>

		and current operational works will happen simultaneously	speed limit at 25 km/hour. Assign different lanes for construction vehicles and operational vehicles. Construction areas should be fenced out to operational staff with proper safety signage. Prior to commencement of construction works, proper onsite traffic management plan shall be prepared and staff on site shall be briefed on its content.	construction phase		<p><i>The construction sites were demarcated by either hording or fencing. Project board including the contact details of GRM focal points, and that of the contractor's site supervisor and health safety supervisor were displayed on each site.</i></p> <p><i>Additionally, no authorised access sign boards and health and safety sign boards were displayed which refers to the PPEs that has to be used by the workers during construction. Occupational health and safety is referred to in the code of conducts as well.</i></p>
Material transfer		Ocean pollution	Ensure any construction material does not make its way into the ocean. Keep the material properly and securely stocked on the supply vessel/barge.	Ocean transfer route/ During construction	Complied	<i>Materials were transported in bulk to the island from Male'. Materials were covered and properly secured from all sides of the vessel.</i>
Influx of laborers (especially foreign) for construction activities to neighboring islands Rasmaadhoo and Innamaadhoo		Social issues	<p>Allocate a staff/ HR manager on each island.</p> <p>Brief the foreigners about the Maldivian culture.</p> <p>Encourage hire of local construction workers from the islands.</p>	During construction	Complied	<p><i>A site supervisor and a health and safety supervisor were identified for each sub-project, who deliver daily toolbox talks in reference to occupational health and safety, COVID19 special considerations, prevention of sexual harassment and gender-based violence standards etc. The code of conducts acquired from contractors and their workers refer to these standards.</i></p> <p><i>The staff list and work permit of all the expatriate staff of contractors were acquired</i></p>

						and verified prior to mobilization. COVID19 related documentations such as PCR negative results and vaccination cards were also acquired for applicable projects (those that commenced during the period of pandemic)
OCCUPATIONAL HEALTH AND SAFETY RISKS DURING CONSTRUCTION						
Dust generated during construction		Worker's health may be affected	Provide masks to the worker where dust is prone in the work area	Site specific	Complied	Face masks were made mandatory for subprojects that progressed during the period of COVID19 pandemic. Prior to this, workers were required to wear dusk masks when carrying out activities that may generate dust, such as cement works.
Noise from machinery / construction		Worker's health may be affected	Workers should have protective gear including earmuffs.	Site specific	Complied / Remediated	<p>Appropriate PPEs were worn by the workers including hard hats gloves and safety shoes.</p> <p>Where non-compliance issues were noticed during monitoring visits, effective and timely remediation measures were employed through contractual interventions. As such, the following non-compliance issues were noticed at the site of LF Construction Pvt Ltd. on 10 November 2020 inspection visit.</p> <p>Major Issues</p> <ol style="list-style-type: none"> 1. Site demarcation was not done. 2. No Entry sign board was not present. 3. Ground level staff were not using general construction PPEs.

						<p>4. Agreed COVID 19 measures were not followed: a) Handwashing / hand sanitizing arrangements not made, b) daily body temperatures logs not maintained, and c) face masks not used.</p> <p>Moderate Issues</p> <p>1. A bin was not present for disposing general waste.</p> <p>2. Stockpiled metal bars were not covered.</p> <p>3. Workers were not aware of Vandhoo being a turtle nesting site.</p> <p>The contractor was informed in writing to remediate these issues and report back with photographic evidence of best practice compliance by 17 November 2020. The site was brought back to full compliance on 16 November 2020.</p>
Work accidents		Worker's health may be affected	Establish and enforce appropriate safety rules and work routines and compulsory use of safety equipment (helmets, protective wear). First aid kit accessible on site, routines for emergencies established and known to all.	Site specific	Complied / Remediated	<p>Project board and safety board were fixed at all the subproject sites.</p> <p>COVID19 special considerations such as handwashing and hand sanitizing facilities were established, emergency contact numbers were displayed, while disinfecting construction tools after each shift, social distancing, minimising contact pool and daily body temperature checks were performed for the subprojects that were carried out during the period of pandemic. A document</p>

						<p>containing COVID19 special consideration guidelines was prepared by the PMU, which the contractors employed during pandemic period.</p> <p>The non-compliance issue identified on 21 May 2021 was effectively remediated on 13 June 2021. Details of this incident is provided in Annex 5.</p>
--	--	--	--	--	--	---

Photographic Evidence



Figure 1 Project Board (with GRM details) and Health and Safety sign boards



Figure 2 PPEs used by contractors



Figure 3 handwashing facilities at subproject sites



Figure 4 Temporary shed/resting area of a contractor



Figure 5 Site demarcation through fencing



Figure 6 Wheelbarrows used by a contractor to transfer material from harbour to site

4. Details of Vegetation Cleared

Most of the subproject plots were devoid of any significant vegetation, considering that most of the plots are allocated from the existing 15ha operational area of the facility that was cleared during the development of the initial facility under MEMP. A total of 15 vegetations were removed since August 2019 to date. **Table 3** provides the details of vegetation removed from the subproject plots where vegetations were found.

Table 3 vegetation removal details

Type of Vegetation	Quantity	Estimated Size	Date of Removal	Location (Geographic Coordinates)	Method of Removal	Management of Waste
Construction of Guard House and Store Room						
Screw Pine	01	Not Specified	17 Aug 2019	-	Manual excavation to remove the plant with the root bulb, trunk cut into smaller pieces and stockpiled, leaves left for natural degradation.	Stockpiled close to the site, leaves left for natural degradation at the forest area.
Sea Hibiscus	02	12 – 17 ft. 16 – 21 ft.	18 Aug 2019	-		
Construction of RO Plant Building						
Coconut Palm	04	30ft, 20ft, 16ft, 13ft	18 Aug 2019	-	Manual excavation to remove the plant with the root bulb, trunk cut into smaller pieces and stockpiled, leaves left for natural degradation.	Stockpiled close to the site, leaves left for natural degradation at the forest area.
Country Almond	01	22 – 27 ft.	18 Aug 2019	-		
Indian Snakewood	01	28 – 33 ft.	18 Aug 2019	-		
Sea Hibiscus	02	22 – 37 ft. 28 – 33 ft.	18 Aug 2019	-		
Upgrading of Water Network and Storage Capacity						
Coconut Palm	01	Height -50 ft Girth - 2ft	21 Sep 2021	5.5321357, 73.0429338	Cutting Down	As per the instructions by Wamco Staff
Indian Almond	02	Height- 30 ft each Girth- 1.5 ft each	21 Sep 2021	5.5320606, 73.0428389		

Photographic Evidence



Figure 7 Vegetation removed from Guard House Plot



Figure 8 Vegetation removed from RO Plant Building Plot



Figure 9 Vegetation removed from RO Plant Project Site

5. Grievances

2 grievances related to construction activities / contractors were received. The complaints made by WAMCO staff based in Vandhoo were effectively remediated. **Table 4** provides such details.

Table 4 Management of Grievances

Grievance	Type	Aggrieved Party	Date	Status
LFC staff not adhering to COVID19 protocols	Unofficial / Phone	WAMCO resident staff	21 May 2021	<p>RESOLVED: The issue was resolved on 13 June 2021.</p> <ul style="list-style-type: none"> Travel to Vandhoo was temporarily suspended until the staff were cleared from HPA. The staff were quarantined in Rasmaadhoo for 14 days as per HPA protocol. Negative PCR results and quarantine release notices from HPA for the all the staff were acquired prior to allowing recommencement of works. Signed code of conducts from all staff were acquired. <p>Refer to Annex 5 for further details.</p>
RO plant contractor trying to lay the electric cable from borehole site to the main distribution box not as per the drawing i.e. shallow depth excavation and not placing the wire inside a trench.	Phone / Email	WAMCO Interim Manager	31 October 2021	<p>RESOLVED: The work of the contractor was immediately halted through an email sent. It was informed that the cable has to be laid inside a trench within a depth of 350mm and the proposed method should be approved by the PMU engineer prior to recommencement of works.</p> <p>The following cable laying method proposed by the contractor on 19 November 2021 was approved by PMU engineer on 21 November 2021.</p>

				<p><u>Excavation</u></p> <ul style="list-style-type: none"> • Trench depth will be 350mm from the existing ground level • Excavation will be carried out in open areas by using the JCB and inside the Wamco premises by manually in order to prevent any kind of damages to existing utilities <p><u>Cable Laying</u></p> <ul style="list-style-type: none"> • Cable will be laid in the middle of the trench on a top of sand bed • Sand bed will be provided on top of the cable as well <p><u>Backfilling</u></p> <ul style="list-style-type: none"> • Backfilling with excavated soil leaving 150mm from the ground level (excavated soil will be free from rocks larger than 50mm, vegetation and its roots, waste material, etc) • Cable warning tape will be laid on top of the soil and again backfilling up to the ground level
--	--	--	--	---

6. ESIA Monitoring

Marine assessments were performed during the preparation of the 2019 ESIA to establish baseline. Figure 10 and **table 5** provides information about reef survey and water sampling locations.



Figure 10 Reef survey and sea water sampling sites at Vandhoo

Table 5 The GPS coordinates of the reef survey and sea water sampling sites at Vandhoo

Site	Latitude	Longitude
RS1/SW1	5° 32.098'N	73° 2.704'E
RS1/SW2	5° 32.094'N	73° 2.350'E
RS3/SW3	5° 31.826'N	73° 2.278'E
SW4	5° 31.729'N	73° 2.544'E

The following **table 6** provides details of marine monitoring assessments that were undertaken as part of the ESIA monitoring.

Table 6 Details of Proposed Marine Monitoring Assessments

Component	Parameter	Monitoring location	Methodology
Reef	Coral cover (diversity)	RS1 RS2	Snorkelling around the reef and taking photo quadrants using an underwater camera at depth of 2-3m, in a belt measuring 200m by 5m, at each site. For coral cover a number of the photo quadrats will be randomly selected from each site and analysed using Coral Point Count with Excel extension (CPCe) software. The mean percentage live coral cover, the species of coral present, the cover of other life forms and abiotic substrate will then be calculated. Fish community abundance will be analysed at the family level, with the focus on estimating the presence of major fish groups and predominant species.
	Fish community (abundance and trophic groups)		
Seawater	Temperature; pH; Salinity Electrical conductivity; TDS; TSS; Turbidity Ammonia; Phosphate; Sulfate	SW1 SW2	Seawater quality tests will be done at SW1 and SW2. Depending on availability, water quality will be analysed in-situ using a portable multi-parameter water testing instrument. Alternatively, samples maybe collected in empty bottles as per the MWSC water test codes and sent to their laboratory for analysis.
Shoreline	High tideline; Low tideline Vegetation line	Shoreline of the island	Shoreline of the island will be re-surveyed and will be carried out using a DJI RTK drone and processed using the application software. High tideline, low tideline and vegetation line will be retaken and compared with baseline.

During the field investigations, the reef and seawater quality north of the island were monitored at RS1/SW1 and RS2/SW2 locations. An additional seawater sample was also taken from the harbour basin considering the change in the proposed brine outfall location from SW4 to harbour basin. The marine environment at RS3/SW3 and SW4 were not monitored at this stage due to that fact that none of the proposed developments have commenced at south side of the island. Seawater at SW4 will be monitored as per the monitoring schedule when the sewer outfall has been constructed.

Furthermore, the following parameters included in the monitoring program of the 2019 ESIA, which are related to the operational phase (identified as a responsibility of the operator - WAMCO), are being monitored through other instruments and reports.

Table 7 Monitoring components covered through other instruments

Component	Parameter	Monitoring location	Methodology
Ground-water	Temperature; pH; Electrical conductivity; TDS; TSS; DO; Ammonia; Phosphate; Sulfate; Zinc; Benzoic acid, Phenols, hydrocarbons	Borewell east Borewell west Well	Groundwater quality are being tested through the ESIA addendum, which is currently being prepared. The report is expected to be submitted to EPA and the World Bank for review by the end of November 2021. Hence, groundwater quality testing was not conducted as part of this monitoring report.
Human health	Vectors; Noise; Dust	At the facility, Systematic records according to the monitoring plans	Monitored and reflected in the monthly operational ESMP monitoring reports prepared by the operator (WAMCO). These reports are generated through the KoBo monitoring tool developed by the MCEP-PMU and is being submitted to the World Bank and the EPA. So far this year, a total of 10 O-ESMP monitoring reports have been submitted.
Waste	Waste loaded (from sources) and unloaded (at Vandhoo)	Tonnes of waste	The monthly waste received at the facility is being reflected in the Operation ESMP monitoring reports of the operator (WAMCO). A total of 9950 tonnes of waste were reported to have been received at the facility this year from January to September 2021.

6.1. Seawater Quality

Seawater samples were taken from SW1 and SW2 locations in 1500ml pet bottles on 24 September 2021. The samples were sent to MWSC laboratory for testing on 26 September 2021.

Water quality test reports are provided in **Annex 6**. No significant change from the baseline was observed. In fact, the results indicate that the seawater quality has improved at the analysed sites in comparisons to the baseline.

Temperature, pH, Salinity, Turbidity and Nitrogen Ammonia are within in the optimal range for seawater quality specified by EPA (refer to Table 20 of 2019 ESIA). Phosphate and Sulphate concentration, although above the reference value, have also declined in comparison to the baseline taken in 2018 (ESIA 2019). Sulphate concentration in SW1 has decreased from 3550 mg/L to 2600 mg/L and in SW2 from 3400 mg/L to 2800 mg/L. Likewise, phosphate concentration in SW1 has decreased from 0.26 mg/L to <0.05 mg/L and in SW2 from 0.1 mg/L to <0.05 mg/L. The sample taken from the harbour basin also show that the concentration of the parameters analysed are well within the required range.

6.2. Coral Cover Diversity

The coral cover was analysed from RS1 and RS2 locations. A number of the photo quadrats were randomly selected from each site and analysed using Coral Point Count with Excel extension (CPCe) software. The mean percentage of live coral cover, the species of coral present, the cover of other life forms and abiotic substrate are analysed separately for each site.

RS1 Site

Table 8 Details of coral cover observed from RS1 site

CATEGORIES	#		SW	
	Points	%	Index	Simpson (1-D)
Other				
Other (O)	1	0.20	0.00	1.00
Pay-Snd,Rbl				
Pavement (P)	53	10.60	0.29	0.40
Rubble (RU)	15	3.00	0.31	0.03
Sand (S)	16	3.20	0.32	0.04
RckAlgae				
Algae (AL)	10	2.00	0.19	0.01
Rock (RO)	126	25.20	0.07	0.86
Coral				
Live Coral (LC)	279	55.80	0.00	1.00
Tape, wand, shadow				
Tape (TAPE)	0	0.00		0.00
Total pts. minus (tape+wand+shadow):	500.00	100.00		

Table 9 Summary of coral cover results from RS 1 site

RESULTS SUMMARY CHART	#		SW	
	Points	%	Index	Simpson (1-D)
OTHER (OT)	1	0.20	0.00	0.00
PAY-SND,RBL (PSR)	84	16.80	0.91	0.53
RCKALGAE (RA)	136	27.20	0.26	0.14
CORAL (C)	279	55.80	0.00	0.00
TAPE, WAND, SHADOW (TWS)	0	0.00		
TOTALS	500	100.00		
NOTES (% of transect)				
NOTES (% of coral)				

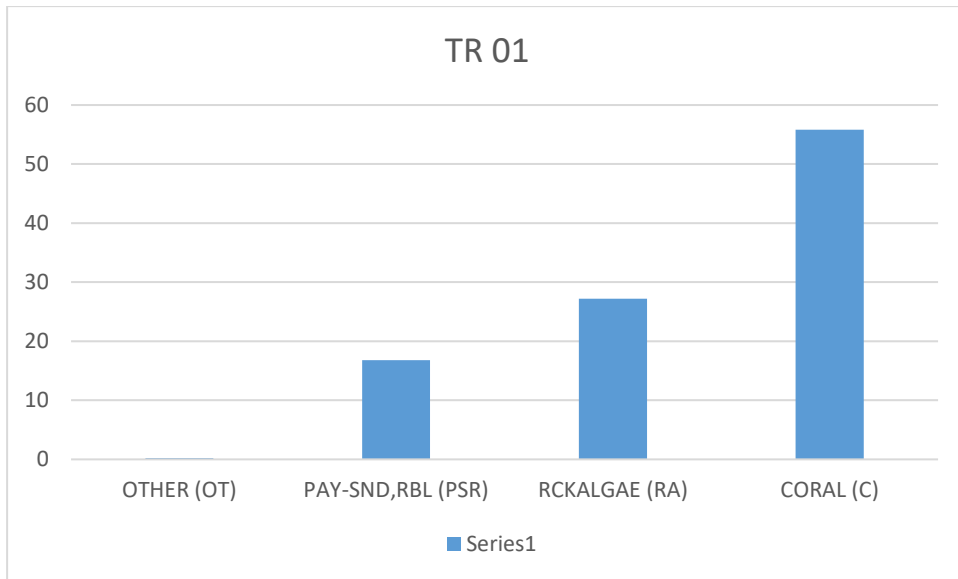
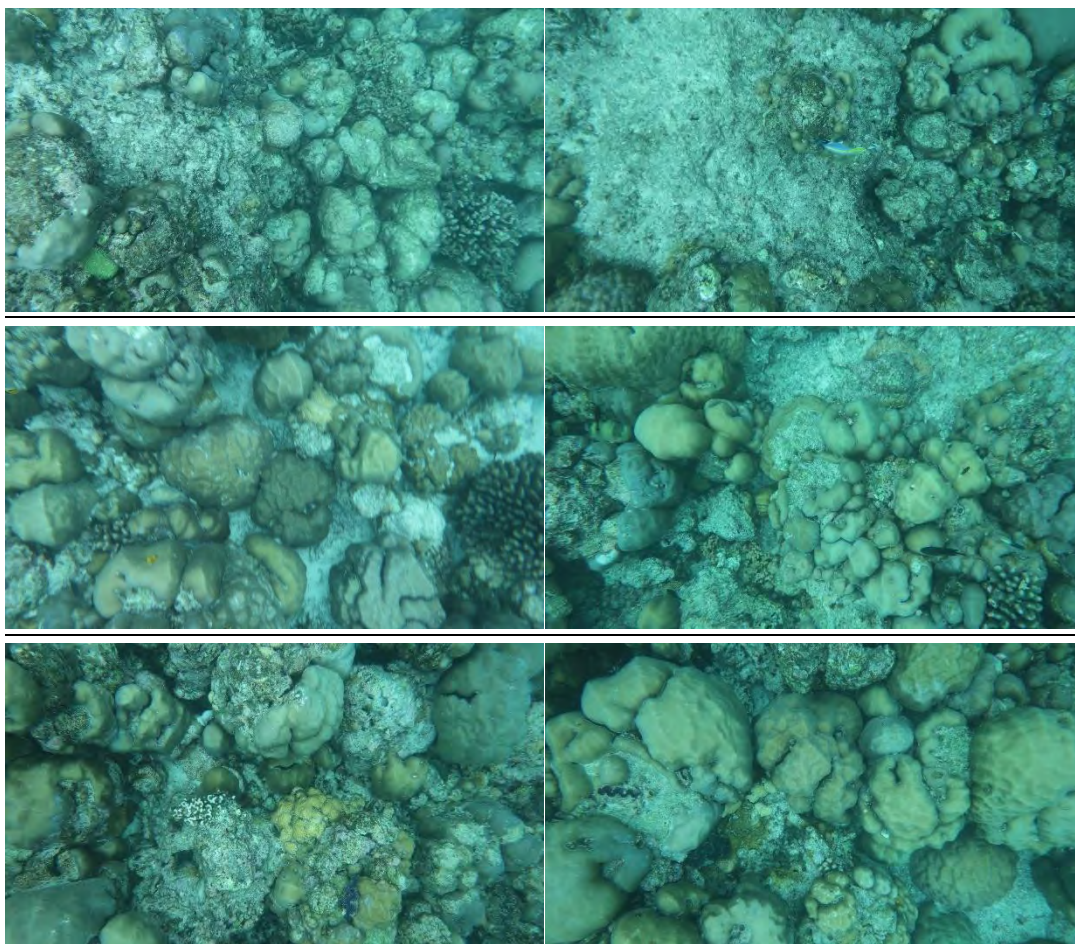
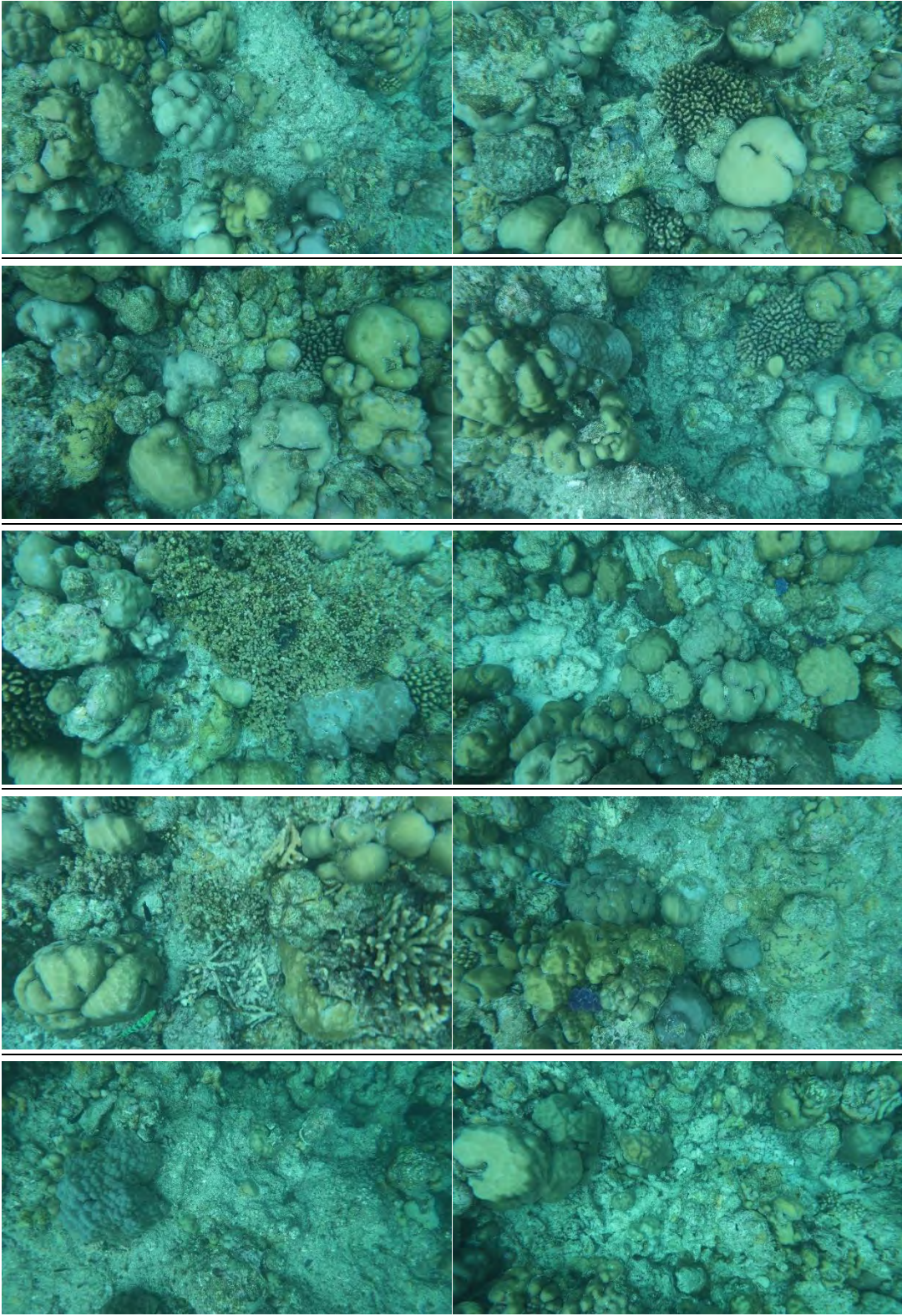


Figure 11 Chart showing coral cover percentages from RS1 site





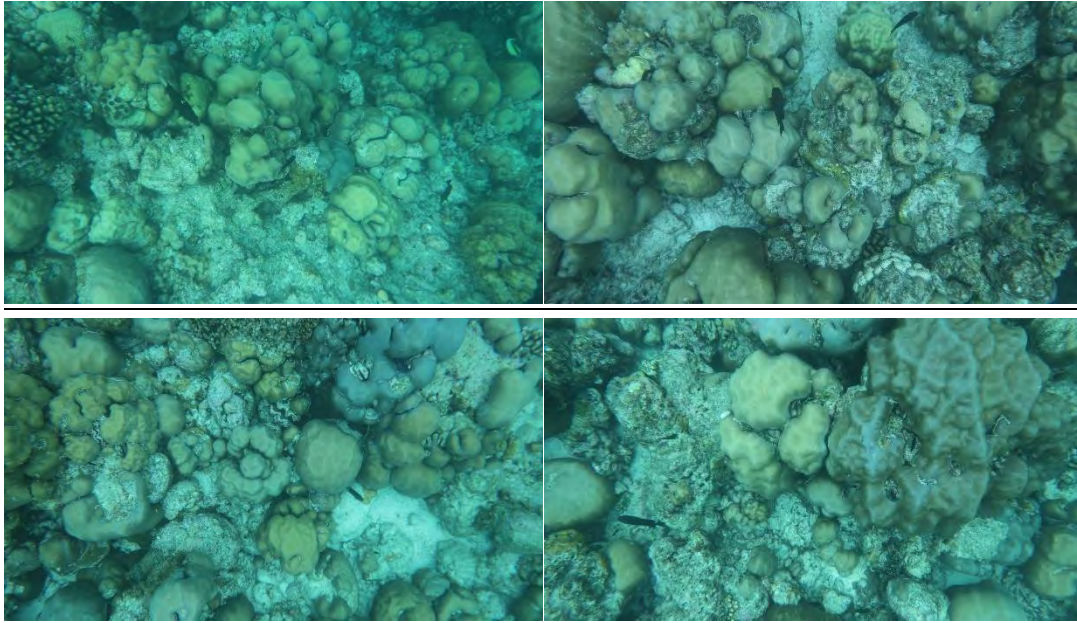


Figure 12 Marine Environment of RS1 site

RS2 Site

Table 10 Details of coral cover observed from RS2 site

CATEGORIES	# Points	%	SW Index	Simpson (1-D)
Other				
Other (O)	3	0.60	0.00	1.00
Pay-Snd,Rbl				
Pavement (P)	28	5.61	0.37	0.12
Rubble (RU)	12	2.40	0.28	0.02
Sand (S)	40	8.02	0.35	0.25
RckAlgae				
Algae (AL)	10	2.00	0.25	0.01
Rock (RO)	73	14.63	0.11	0.77
Coral				
Live Coral (LC)	333	66.73	0.00	1.00
Tape, wand, shadow				
Tape (TAPE)	0	0.00		0.00
Total pts. minus (tape+wand+shadow):	499.00	100.00		

Table 11 Summary of coral cover results from RS2 site

RESULTS SUMMARY CHART	#		SW	
	Points	%	Index	Simpson (1-D)
OTHER (OT)	3	0.60	0.00	0.00
PAY-SND,RBL (PSR)	80	16.03	1.00	0.61
RCKALGAE (RA)	83	16.63	0.37	0.21
CORAL (C)	333	66.73	0.00	0.00
TAPE, WAND, SHADOW (TWS)	0	0.00		
TOTALS	499	100.00		

NOTES (% of transect)
NOTES (% of coral)

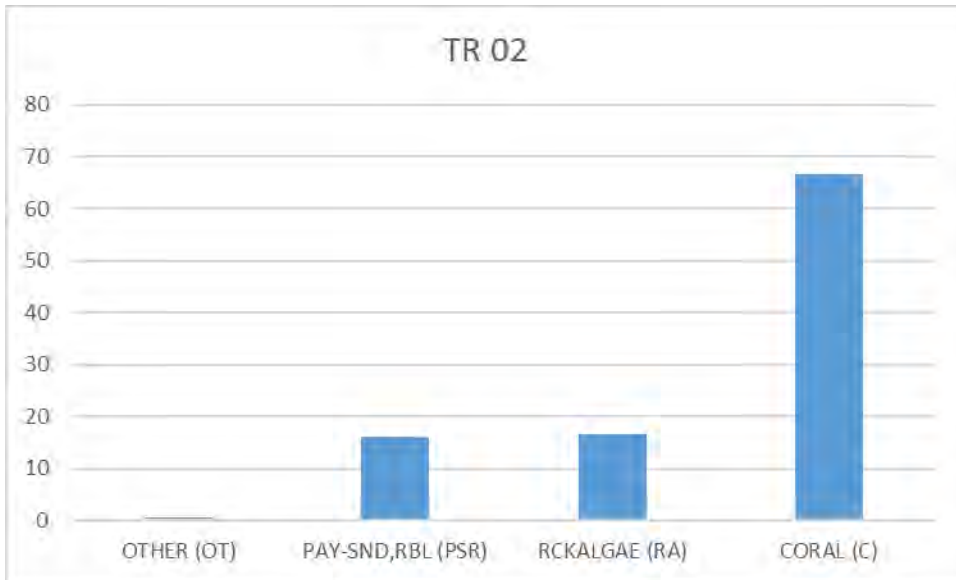
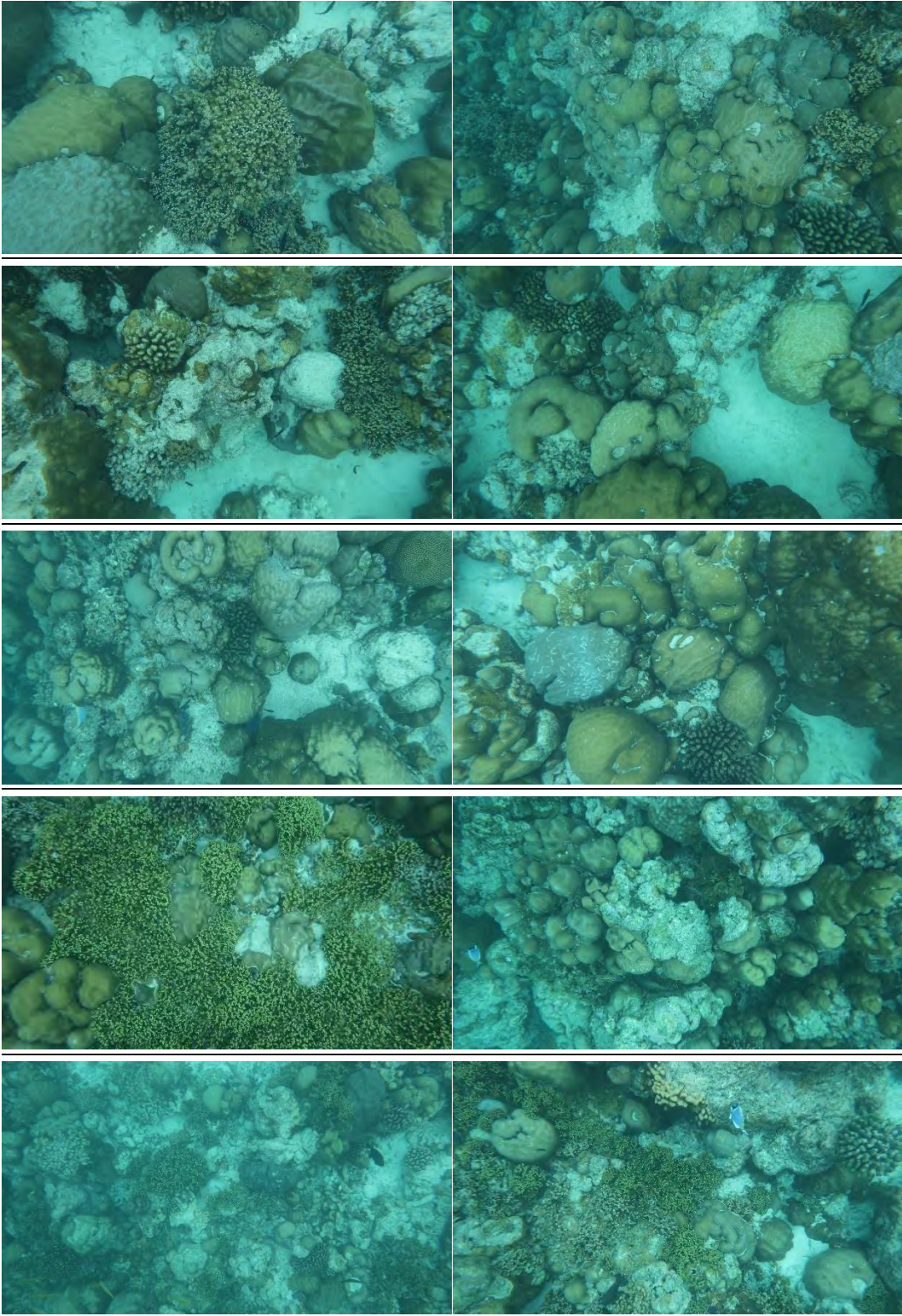


Figure 13 Chart showing coral cover percentages from RS2 site





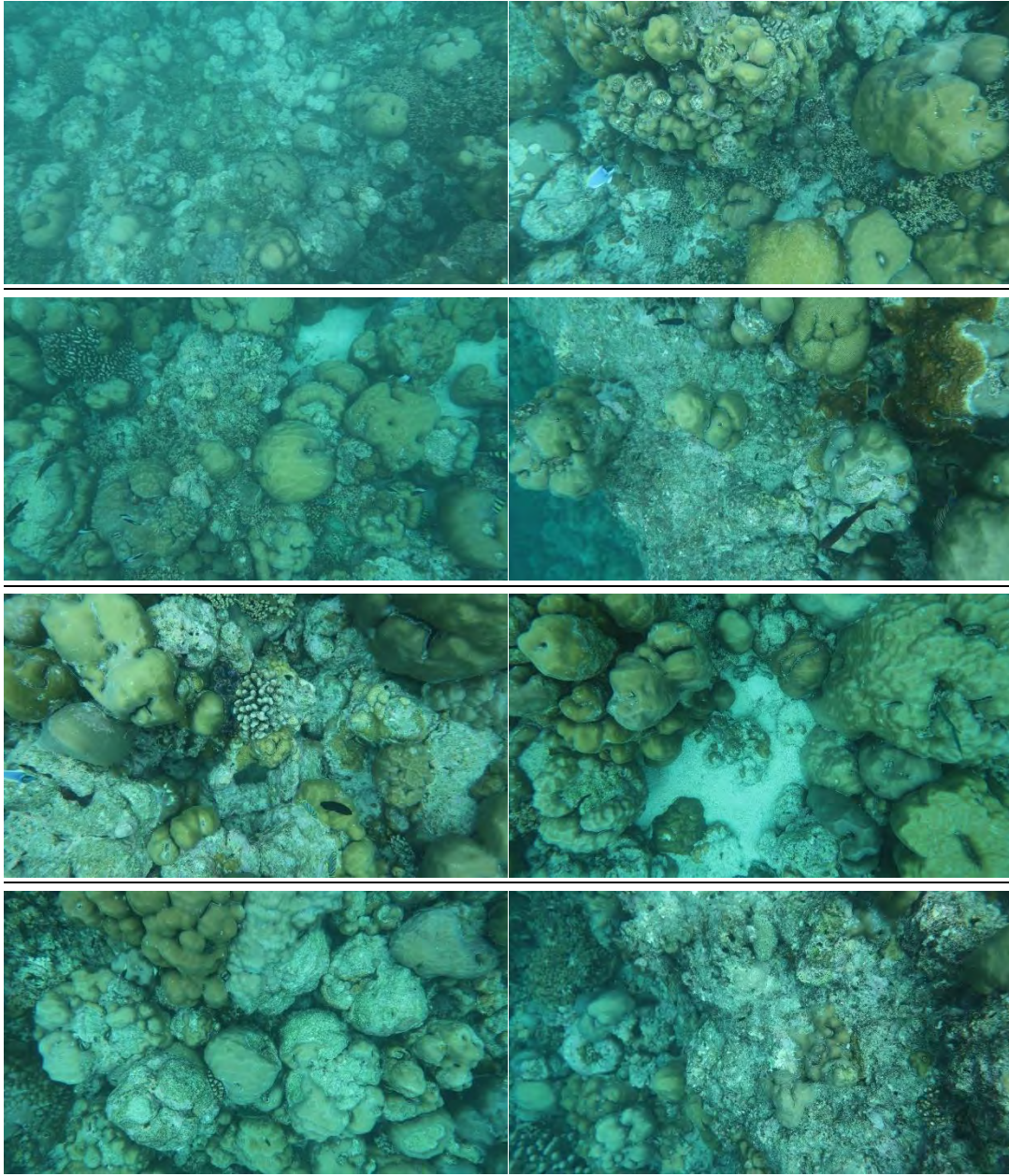


Figure 14 Marine Environment of RS2 site

Analysis

Live coral cover was the dominant type of coral, followed by “Rock and Algae” and “Pavement, Rubble and Sand” at both RS1 and RS2 sites. Hence, the general condition of the reef is considered to be very good.

6.3. Fish Community

Fish community was analysed by snorkelling around the reef at the RS1 and RS2 survey location points. Analysis was done at the family level, with the focus on estimating the presence of major fish groups and predominant species. Fish population was not checked due to the abundance of species observed.

RS1 Site

Table 12 Fish species observed from RS1 site

Common Name	Scientific Name
Pullers	Pomacentriadae
Damsels	Pomacentriadae
Wrasses	Labridae
Sailfin Surgeonfish	<i>Zebrasoma desjardinii</i>
Peacock Rock Cod	<i>Cephalopholis argus</i>
Blue Tang	<i>Paracanthurus hepatus</i>
Moorish Idol	<i>Zanclus cornutus</i>
Pinstriped Butterflyfish	<i>Chaetodon trifasciatus</i>
Phantom Butterflyfish	<i>Henochus pleurotaenia</i>
Oriental Sweetlips	<i>Plactorhinchus vittatus</i>
Spotted Butterflyfish	<i>Chaetodon guttatissimus</i>
Shabby Parrotfish	<i>Chlorurus sordidus</i>
Long-nose Butterflyfish	<i>Forcipiger flavissimus</i>
Very-long-nose Butterflyfish	<i>Forcipiger longirostris</i>
Spotted Butterflyfish	<i>Chaetodon guttatissimus</i>
Night Surgeonfish	<i>Acanthurus thompsoni</i>
Sergent Major	<i>Abudefduf vaigiensis</i>
Ember Parrotfish	<i>Scarus rubroviolaceus</i>

RS 2 Site

Table 13 Fish species observed from RS2 site

Common Name	Scientific Name
Pullers	Pomacentriadae
Damsels	Pomacentriadae
Wrasses	Labridae
Spotted Butterflyfish	<i>Chaetodon guttatissimus</i>
Shabby Parrotfish	<i>Chlorurus sordidus</i>
Indian Coral Grouper	<i>Plectropomus pessuliferus</i>
Blue Tang	<i>Paracanthurus hepatus</i>
Brown Butterflyfish	<i>Chaetodon kleinii</i>
Phantom Butterflyfish	<i>Henochus pleurotaenia</i>
Black pyramid Butterflyfish	<i>Hemitaurichthys zoster</i>

Sergent Major	Abudefduf vaigiensis
Yellow-head Butterflyfish	Chaetodon xanthocephalus
Peacock Rock Cod	Cephalopholis argus
Triangular Butterflyfish	Chaetodon triangulum
Long-nose Butterflyfish	Forcipiger flavissimus
Very-long-nose Butterflyfish	Forcipiger longirostris
Moorish Idol	Zanclus cornutus
Pinstriped Butterflyfish	Chaetodon trifasciatus
Blue-fin jack	Caranx melampygus
Spotted Butterflyfish	Chaetodon guttatissimus
Double-saddle Butterflyfish	Chaetodon falcula
Lunar-tailed Grouper	Variola louti
White-lined Grouper	Amyperodon leucogrammicus
Head-band Butterflyfish	Chaetodon collare
Red-flushed Grouper	Aethaloperca rogaa
Small-tooth Emperor	Lethrinus microdon
Oriental Sweetlips	Plactorhinchus vittatus
Meyer's Butterflyfish	Chaetodon meyeri
Ember Parrotfish	Scarus rubroviolaceus
Coral Rabbitfish	Siganus corallinus

Analysis

The reef at the surveyed locations are rich in marine biodiversity with a variety of fish species observed.

6.4. Vegetation line and Shoreline

Shoreline survey was conducted using DJI RTK drone. Aerial photo was acquired at a height of 120 m. AgiSoft Metashape software was used to process the acquired images. The relative accuracy of these images is less than 20 cm.

After the images were processed, ArcGIS Software was used to digitize the beach line and the vegetation line. Vegetation line and shoreline map is presented in **Annex 7**.

The vegetation line remains exactly the same as the baseline with no changes observed. The shoreline is also more or less similar to the baseline. However, it is observed that the beach area at the west has slightly reduced, which can be attributed to coastal erosion and/or temporary seasonal shifting of sand due to changes in wind direction and wave patterns.

7. Conclusion

The monitoring report focuses on the construction phase of the sub-projects proposed at Zone II RWMF under the 2019 ESIA under implementation and those completed. It evaluates the present condition of the environment at R. Vandhoo in comparison to the baseline and presents information on the level of implementation of mitigation measures by the contractors. Management of grievances at subproject level is also covered.

It is to be noted that this monitoring report has only considered the survey locations at the north side of the island considering that the interventions proposed at the south side are yet to commence. The survey results indicate that no major changes are observed from the baseline environmental condition. Seawater quality is shown to have improved with a decline in sulphate and phosphate concentrations. The reef is healthy, predominated by live corals and an abundance of a variety of fish species. The vegetation line remains unchanged, and the shoreline is also more or less similar to the baseline, although showing slight decline in beach area at the west, which is believed to only be temporary, attributed mainly to the seasonal shifting of sand.

Mitigation measures were implemented by the contractors to a satisfactory level. This was ensured through regular site monitoring by the proponent and implementation of timely corrective actions where non-compliance issues were noticed. A total of two grievances were received since the commencement of subproject activities in August 2019, all of which were effectively remediated in a timely manner.

ANNEX 1

ESIA Decision Statement of EPA



x. All mitigation measures proposed in the EIA report for all the phases of the project shall be fully implemented.

x. جميع تدابير التخفيف المقترحة في تقرير تقييم الأثر البيئي لجميع مراحل المشروع يجب تنفيذها بالكامل.

xi. The environmental monitoring program outlined in the Environmental Impact Assessment Report shall be undertaken and implemented and summary environmental monitoring reports shall be submitted to the Ministry.

xi. برنامج المراقبة البيئية المبين في تقرير تقييم الأثر البيئي يجب تنفيذه وتنفيذه وتقديم تقارير موجزة عن المراقبة البيئية إلى الوزارة.

xii. The date of expiry stated in this Environmental Decision Statement is the duration given to commence the project activities approved under this Environmental Decision Statement.

xii. تاريخ انتهاء الصلاحية المبين في هذا البيان البيئي هو المدة الممنوحة لبدء أنشطة المشروع الموافق لهذا البيان البيئي.

xiii. Once the project activities have started, the Proponent must inform the Environmental Protection Agency, the date of commencement of project activities.

xiii. بمجرد بدء أنشطة المشروع، يجب على المبرر إعلام وكالة حماية البيئة بتاريخ بدء أنشطة المشروع.



Date of Issue: 14th February 2019

تاریخ مقررہ: 14 فبروری 2019

Date of expiry: 14th February 2020

تاریخ ختم: 14 فبروری 2020

Name: Ibrahim Mohamed

نام: ابراہیم محمد

Designation: Deputy Director General

مقام: ڈیپٹی ڈائریکٹر جنرل

Signature:

سہ:



ANNEX 2

Brine Outfall Location Change Approval by EPA



ދިވެހިސަރުކާރުގެ ގެޒެޓްގައި ބަޔާންކުރި ގަނޑު

Environmental Protection Agency **EPA**



ނަންބަރު: 203-ECA/438/2020/52

މި ގަނޑުގައި ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑުގައި ބަޔާންކުރި ގަނޑު

ފަދަ ގަނޑުގައި ބަޔާންކުރި ގަނޑު

މި ގަނޑުގައި ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑުގައި ބަޔާންކުރި ގަނޑު
ސަރުކާރުގެ ބަޔާންކުރި ގަނޑު

މި ގަނޑުގެ ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑު (32 ގަނޑު 3232) 438-WMPC/203/2020/55

ފަދަ ގަނޑުގައި ބަޔާންކުރި ގަނޑު

މި ގަނޑުގައި ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑު
މި ގަނޑުގައި ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑު
މި ގަނޑުގައި ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑުގެ ބަޔާންކުރި ގަނޑު

މި ގަނޑުގެ ބަޔާންކުރި ގަނޑު

2443 ގަނޑު 20

34 ގަނޑު 3232

މި ގަނޑު

މި ގަނޑުގެ ބަޔާންކުރި ގަނޑު
މި ގަނޑުގެ ބަޔާންކުރި ގަނޑު

މި ގަނޑުގެ ބަޔާންކުރި ގަނޑު

މި ގަނޑުގެ ބަޔާންކުރި ގަނޑު





Ministry of Environment

Male', Republic of Maldives.

ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން

ސަރުކާރު : 438-WMPC/203/2020/55

ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން

ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން

ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން 203-EIARES/438/2019/17 (14 ޖުލައި 2019) ޖަލްޞަދު ޖަލްޞަދު

ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން

ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން

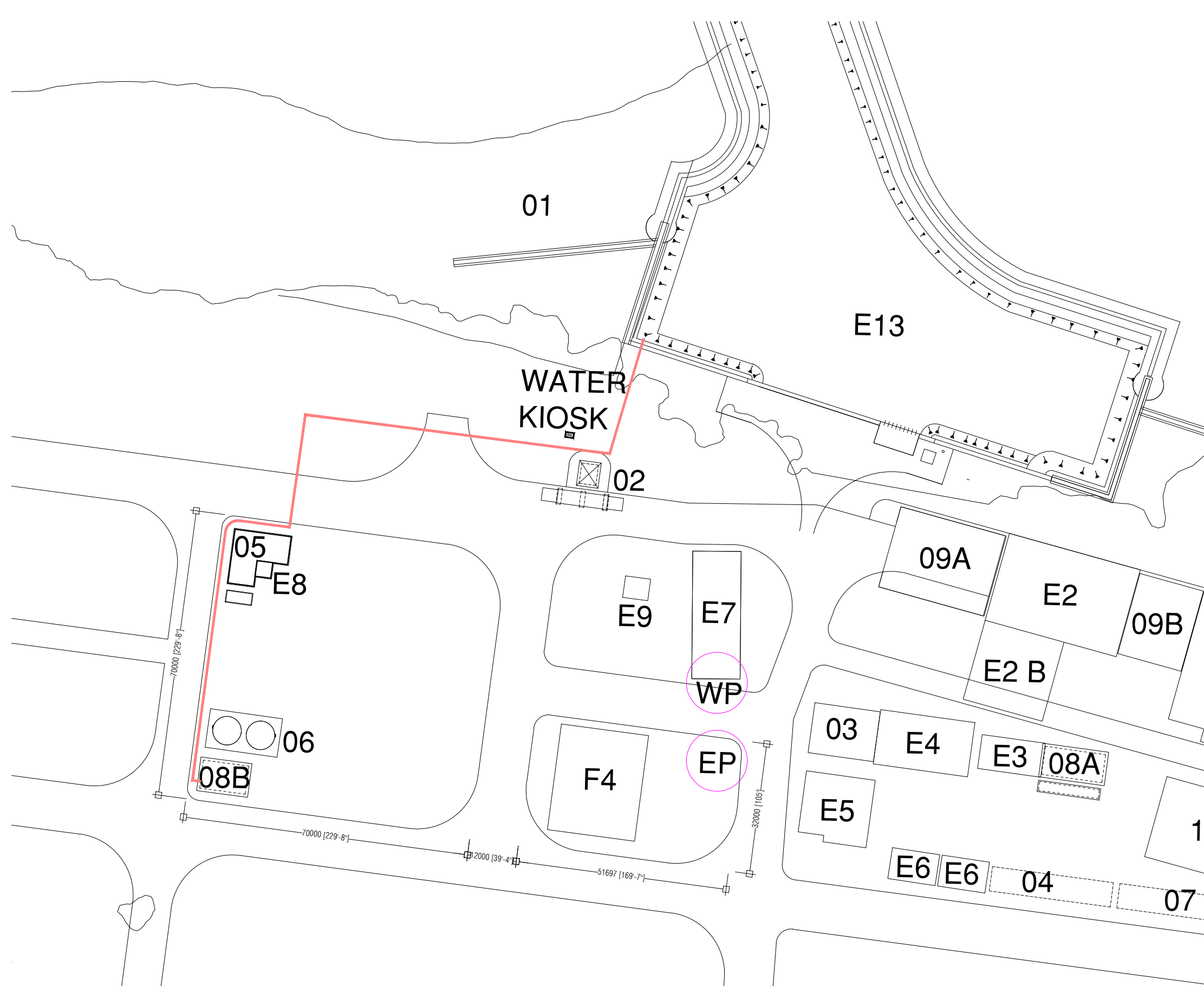
ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން

04 ޖުލައި 2020

23 ޖުލައި 2020

ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން

ޖިއޯސައިންސް ޕްލޭން ޔަދު ޤައުމީ ޖިއޯސައިންސް ޕްލޭން ޖަލްޞަދު ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން
ޖަލްޞަދު ޖިއޯސައިންސް ޕްލޭން



WASTE MANAGEMENT FACILITIES

- 01. HARBOUR EXTENSION
- 02. GUARD HOUSE AND WEIGH BRIDGE
- 03. VEHICLE SHED EXTENSION BUILDING
- 04. STORAGE EXTENSION BUILDING
- 05. FUEL FARM
- 06. WATER STORAGE TANKS
- 07. MECHANICAL STORAGE
- 08A. POWER HOUSE
- 08B. DESALINATION BUILDING
- 09A/09B. WASTE SORTING SHED EXTENSION
- 10. RECEIVING BUNKERS
- 11. WASTE MANAGEMENT FACILITIES
 - 11A - RESERVED FOR FUTURE USE
 - 11B - RECYCLABLES
 - 11C - RECYCLING (WITH COMPACTION AND BALING PLANT)
 - 11D - E-WASTE
 - 11E - BULK WASTE
 - 11F - COMPOST PACKAGING AND STORAGE
 - 11G - HAZARDOUS WASTE
- 12. UNPROCESSED WASTE BUNKER
- 13. PUMP HOUSE
- 14. PROPOSED LANDFILL
 - 14A - C&D WASTE
 - 14B - GENERAL WASTE
- 15. PROPOSED LEACHATE COLLECTION

- REJECT LINE (275 MTR)
- WP WATER POINT
- EP ELECTRIC POINT

FUTURE DEVELOPEMENT

- F1. FUTURE INCINERATOR LOCATION
- F2. FUTURE WASTE MANAGEMENT FACILITIES
- F3. FUTURE FOOTBALL FIELD
- F4. TRAINING FACILITY & HR BUILDING


STAFF VILLAGE

- S1. MOSQUE
- S2. STAFF FACILITIES BUILDING
 - STAFF KITCHEN
 - CAFETERIA
 - LAUNDRY
 - RECREATION
 - GYM
- S3. STAFF ACCOMMODATION X4
- S4. GUEST ACCOMMODATION X4
- S5. CONSULTANTS ACCOMMODATION X2

G. GREEN AREAS

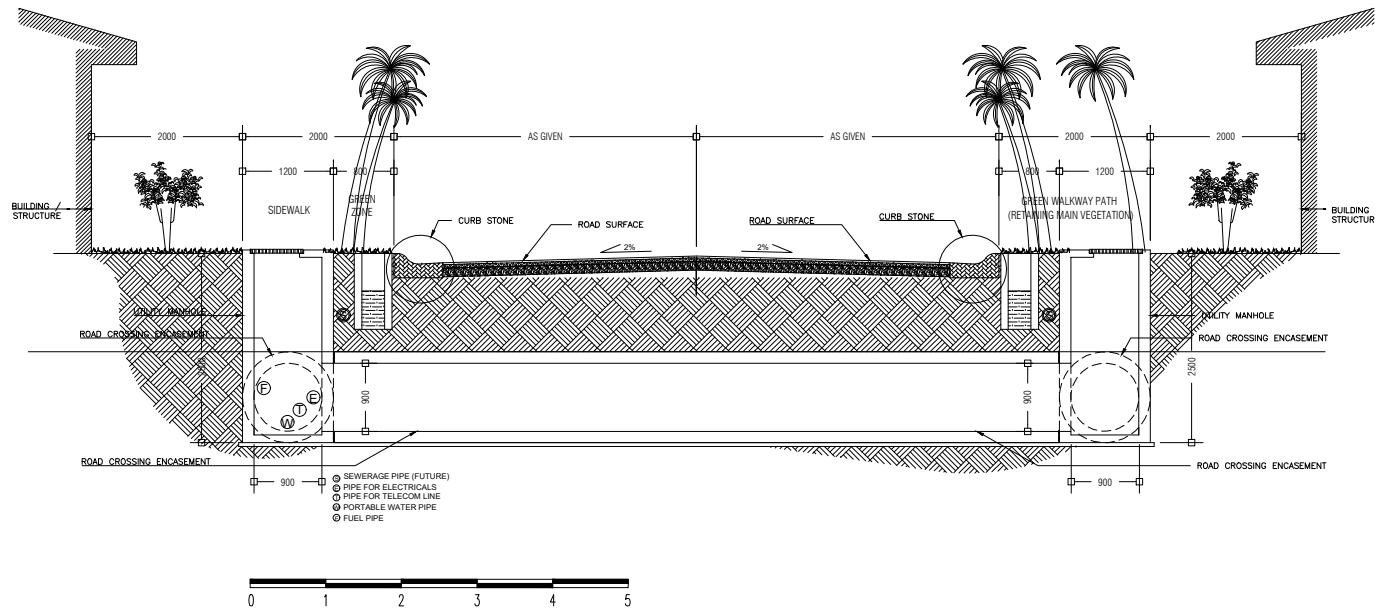
EXISTING BUILDINGS


- E1. INCINERATOR
- E2. WASTE SORTING SHED
- E2B. WASTE SORTING SHED ANNEX (TO BE RELOCATED)
- E3. UTILITY BUILDING
- E4. VEHICLE SHED
- E5. LOCKER ROOM FACILITY (EXISTING STAFF ACCOM.)
- E6. STORAGE BUILDINGS
- E7. OFFICE BUILDING (EXISTING ACCOM. BUILDING)
- E8. RELOCATED FUEL TANKS (PROPOSED PETROL TANK)
- E9. MOSQUE
- E10. EXISTING LANDFILL
- E11A. EXISTING LEACHATE COLLECTION POND
- E11B. EXISTING STORMWATER COLLECTION POND
- E12. EXISTING OVERHEAD TANK AND FIRE PUMP
- E13. EXISTING HARBOR

PREPARED BY	PROJECT	DESIGN BY	AMENDMENTS
	NEW RO PLANT AND BOREHOLE R.VANDHOO		DIMENSIONS ADDED WATER POINT AND ELECTRICITY POINT ADDED
 MCEP MINISTRY OF ENVIROMENT GREEN BUILDING, HANDHUVAREE HIGUN, MAAFANNU, MALE' (20392), REPUBLIC OF MALDIVES, TEL: +960-3018431, +960-3018300, FAX: +960-328301	TITLE	STRUCTURE BY	
	SITE PLAN: BRINE DISCHARGE LINE		
CLIENT DEPARTMENT	DRAWN BY		
WMPC DEPARTMENT	AFRAZ		
PAPER SIZE A3	SCALE		
PAGE NO. 02	DWG NO. ROVND-A1-02(R)		
	DATE 10.12.2020		

ANNEX 3

Revised road cross-section drawing



PREPARED BY  MCEP MINISTRY OF ENVIRONMENT, CLIMATE CHANGE AND TECHNOLOGY GREEN BUILDING, HANDHUVAREE HIGUN, MAAFANNU, MALÉ (20392), REPUBLIC OF MALDIVES, TEL: +960-3018431, +960-3018300, FAX: +960-328301	PROJECT REGIONAL WASTE MANAGEMENT FACILITY R.VANDHOO	DESIGN BY MARTYN	AMENDMENTS REVISED AS PER EPA DECISION STATEMENT
	TITLE TYPICAL ROAD CROSS SECTION	STRUCTURE BY	
	CLIENT DEPARTMENT WMPC DEPARTMENT	DRAWN BY AFRAZ	
	PAPER SIZE A4	SCALE 1:100	
	PAGE NO. 01	DWG NO. VANDMP-RCS-A1-01(R)	
		DATE 28.10.2021	

ANNEX 4

Standard Code of Conducts

Company Code of Conduct Implementing ESHS and OHS Standards Preventing Gender Based Violence

The company is committed to ensuring that the project is implemented in such a way which minimizes any negative impacts on the local environment, communities, and its workers. This will be done by respecting the environmental, social, health and safety (ESHS) standards, and ensuring appropriate occupational health and safety (OHS) standards are met. The company is also committed to creating and maintaining an environment where children under the age of 18 will be protected, and where Sexual Exploitation and Abuse (SEA) and sexual harassment have no place. Improper actions towards children, SEA and sexual harassment are acts of Gender Based Violence (GBV) and as such will not be tolerated by any employee, sub-contractors, supplier, associate, or representative of the company.

Therefore, to ensure that all those engaged in the project are aware of this commitment, the company commits to the following core principles and minimum standards of behavior that will apply to all company employees, associates, and representatives, including sub-contractors and suppliers, without exception:

General

1. The company—and therefore all employees, associates, representatives, sub-contractors and suppliers—commits to complying with all relevant national laws, rules and regulations.
2. The company commits to full implementing the “Construction Phase Mitigation Measures” given in the “Environmental and Social Impact Assessment (ESIA) for the Upgrading of Infrastructure at the Regional Waste Management Facility Zone II, Raa, Vandhoo” (2019) which forms part of the contract.
3. The company commits to fully implement the COVID19 special considerations and requirements of the client.
4. The company commits to fully implement the turtle management plan of the ESIA.
5. The company commits to treating women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. Acts of GBV are in violation of this commitment.
6. The company shall ensure that interactions with local community members are done with respect and non-discrimination.
7. Demeaning, threatening, harassing, abusive, culturally inappropriate, or sexually provocative language and behavior are prohibited among all company employees, associates, and its representatives, including sub-contractors and suppliers.
8. The company will follow all reasonable work instructions (including regarding environmental and social norms).
9. The company will protect and ensure proper use of property (for example, to prohibit theft, carelessness or waste).

Health and Safety

10. The company will ensure that the project’s OHS Management Plan is effectively implemented by company’s staff, as well as sub-contractors and suppliers.

11. The company will ensure that all persons on-site wear prescribed and appropriate personal protective equipment, preventing avoidable accidents, and reporting conditions or practices that pose a safety hazard or threaten the environment.
12. The company will prohibit the use of alcohol, narcotics or other substances which can impair faculties at all times.
13. The company will ensure that the COVID19 special considerations and requirements are implemented, such as:
 - The staff is properly wearing face masks at all times during working hours and when commuting to and from the job site.
 - Handwashing and/or hand sanitation facilities are available at the work site, eating and resting places and at the accommodation house or building. The workers must be instructed to practice frequent handwashing. Constructions tools should also be cleaned daily using disinfectants (1:9 bleach solution).
 - Social distancing is maintained by all staff when commuting to and from the job site.
 - The staff are not interacting with Vandhoo resident staff or other contractors' employees unless it is an emergency, and even then, social distancing is maintained.
 - The staff are not leaving their accommodations, and meeting island residents unless it's an emergency, and even then, social distancing must be maintained.
 - Daily body temperature of all the staff are taken and recorded prior to leaving the stationed island and temperature logs sent Vandhoo focal point and the data is shared with the client on a regular basis. If a member is having a temperature of 37.8C or greater or any signs of COVID19 he/she should not be allowed to travel and must be referred to a healthcare provider with HPA also being notified. The staff with symptoms should not be involved in the project team until cleared by the respective authorities.
 - Prior travel approval is attained from one of the following Vandhoo resident staff on each working day:
 1. Mohamed Shaan (WAMCO)
 2. Hussain Zareer (WAMCO)
 3. Hussain Shafiu (WAMCO)
 4. Martyn Jones (MCEP)
 - If any member of the project team is travelling to another island other than the stationed island or R.Vandhoo, approval must be attained from the relevant authorities and the client must be properly notified about the intended duration and traveling island(s).
 - The supervisor monitors the aforementioned measures closely and reports to the company's head office regularly.
 - Sanction penalties on all employees who fail to follow the rules.
14. The company will ensure that project's grievance redress mechanism is implemented.
15. The company will not hire children under the age of 18 for construction work, or allow them on the work site, due to the hazardous nature of construction sites.
16. The company will ensure that adequate sanitation facilities are available on site and at any worker accommodations provided to those working on the project.

Gender Based Violence

17. Acts of GBV constitute gross misconduct and are therefore grounds for sanctions, which may include penalties and/or termination of employment and, if appropriate, referral to the Police for further action.
18. All forms of GBV, are unacceptable, regardless of whether they take place on the work site, the work site surroundings, at worker's camps or within the local community.

19. Sexual harassment of work personnel and staff (e.g. making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature) are acts of GBV and are prohibited.
20. Sexual favors (e.g. making promises of favorable treatment such as promotions, threats of unfavorable treatment such as losing a job, payments in kind or in cash dependent on sexual acts) and any form of humiliating, degrading or exploitative behavior are prohibited.
21. The use of prostitution in any form at any time is strictly prohibited.
22. Sexual contact or activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
23. Unless there is full consent¹ by all parties involved in the sexual act, sexual interactions between the company's employees (at any level) and members of the communities surrounding the work place are prohibited. This includes relationships involving the withholding/promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered “non-consensual” within the scope of this Code.
24. In addition to company sanctions, legal prosecution of those who commit acts of GBV will be pursued if appropriate.
25. All employees, including volunteers and sub-contractors are highly encouraged to report suspected or actual acts of GBV by a fellow worker, whether in the same company or not. Reports must be made in accordance with project's GBV Allegation Procedures.
26. Managers are required to report and act to address suspected or actual acts of GBV as they have a responsibility to uphold company commitments and hold their direct reports responsible.

Implementation

To ensure that the above principles are implemented effectively the company commits to:

27. Ensuring that all managers sign the project's 'Manager's Code of Conduct' detailing their responsibilities for implementing the company's commitments and enforcing the responsibilities in the 'Individual Code of Conduct'.
28. Ensuring that all employees sign the project's 'Individual Code of Conduct' confirming their agreement to comply with ESHS and OHS standards, and not to engage in activities resulting in GBV, child endangerment or abuse, or sexual harassment.
29. Displaying the Company and Individual Codes of Conduct prominently and in clear view at workers' camps, offices, and in public areas of the work space. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
30. Ensuring that posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
31. Ensuring that an appropriate person is nominated as the company's 'Focal Point' for addressing ESHS, OHS and GBV issues.
32. Ensuring that all employees are properly briefed and that they are familiar with the company's commitments to ESHS and OHS standards, and the project's GBV Codes of Conduct.

Sanction

In case of a major breach of this Code of Conduct, the client is entitled to take disciplinary action against the company (as per the contract) which could include:

- 33. Informal warning.
- 34. Formal warning.
- 35. Withholding of payments.
- 36. Deduction from retention payment.
- 37. Termination of contract.
- 38. Report to the Police if warranted.

I do hereby acknowledge that I have read the foregoing Company Code of Conduct, and on behalf of the company agree to comply with the standards contained therein. I understand my role and responsibilities to support the project's OHS and ESHS standards, and to prevent and respond to GBV. I understand that any action inconsistent with this Company Code of Conduct or failure to act mandated by this Company Code of Conduct may result in disciplinary action.

Company name: _____

Signature: _____

Printed Name: _____

ID or PP No: _____

Date: _____

Individual Code of Conduct Implementing ESHS and OHS Standards Preventing Gender Based Violence

I, _____, acknowledge that adhering to environmental, social, health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing Gender Based Violence (GBV) is important.

The Company considers that failure to follow ESHS and OHS standards, or to partake in activities constituting GBV—be it on the work site, the work site surroundings, at workers' camps, or the surrounding communities—constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. Prosecution by the Police of those who commit GBV may be pursued if appropriate.

I agree that while working on the project I will:

1. Consent to Police background check.
2. Attend and actively partake in training courses related to ESHS, OHS, and GBV as requested by my employer.
3. Will wear my personal protective equipment (PPE) at all times when at the work site or engaged in project related activities.
4. Take all practical steps to implement the “Construction Phase Mitigation Measures” given in the “Environmental and Social Impact Assessment (ESIA) for the Upgrading of Infrastructure at the Regional Waste Management Facility Zone II, Raa, Vandhoo (2019)”.
5. Implement the OHS Management Plan as per the ESIA.
6. Implement the Turtle Management Plan as per the ESIA.
7. Implement COVID19 special considerations and the requirements of the client.
8. Refrain from the use of alcohol, narcotics or other substances which can impair faculties at all times.
9. Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
10. Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
11. Not sexually exploit or abuse project beneficiaries and members of the surrounding communities.
12. Not engage in sexual harassment of work personnel and staff—for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature is prohibited. E.g. looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; in some instances, giving personal gifts.
13. Not engage in sexual favors—for instance, making promises of favorable treatment (e.g. promotion), threats of unfavorable treatment (e.g. loss of job) or payments in kind or in cash, dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
14. Not use prostitution in any form at any time.
15. Not participate in sexual contact or activity with children under the age of 18—including grooming, or contact through digital media. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.

16. Unless there is the full consent¹ by all parties involved, I will not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered “non-consensual” within the scope of this Code.
17. Consider reporting through the GRM or to my manager any suspected or actual GBV by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.

With regard to children under the age of 18:

18. Bring to the attention of my manager the presence of any children on the construction site or engaged in hazardous activities.
19. Wherever possible, ensure that another adult is present when working in the proximity of children.
20. Not invite unaccompanied children unrelated to my family into my home, unless they are at immediate risk of injury or in physical danger.
21. Not use any computers, mobile phones, video and digital cameras or any other medium to exploit or harass children or to access child pornography (see also “Use of children's images for work related purposes” below).
22. Refrain from physical punishment or discipline of children.
23. Refrain from hiring children for domestic or other labor below the minimum age of 14 unless national law specifies a higher age, or which places them at significant risk of injury.
24. Comply with all relevant local legislation, including labor laws in relation to child labor and World Bank’s safeguard policies on child labor and minimum age.
25. Take appropriate caution when photographing or filming children (See Annex 2 for details).

Use of children's images for work related purposes

When photographing or filming a child for work related purposes, I must:

26. Before photographing or filming a child, assess and endeavor to comply with local traditions or restrictions for reproducing personal images.
27. Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.
28. Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.
29. Ensure images are honest representations of the context and the facts.
30. Ensure file labels do not reveal identifying information about a child when sending images electronically.

Sanctions

I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action which could include:

31. Informal warning.
32. Formal warning.
33. Additional Training.
34. Loss of up to one week’s salary.

- 35. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
- 36. Termination of employment.
- 37. Report to the Police if warranted.

I understand that it is my responsibility to ensure that the environmental, social, health and safety standards are met. That I will adhere to the occupational health and safety management plan. That I will avoid actions or behaviors that could be construed as GBV. Any such actions will be a breach this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to act mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signature: _____
Printed Name: _____
ID or PP No: _____
Date: _____

ANNEX 5

Remediation of COVID19 non-compliance issue

Re: Informing about a COVID19 positive case of a contractor

Ahmed Hassaan Zuhair <ahmed.hassaan@environment.gov.mv>

Sun 6/13/2021 12:33 PM

To: Mokshana Nerandika Wijeyeratne <mwijeyeratne@worldbank.org>

Cc: Shanek Mario Fernando <sfernando6@worldbank.org>; Abdul Raheem Mohamed <abdul.raheem@environment.gov.mv>; ahmed.nizam@environment.gov.mv <ahmed.nizam@environment.gov.mv>; ahmed saleem <ahmed.saleem@environment.gov.mv>; Aishath Ajfaan Jawaadh <aishath.ajfaan@environment.gov.mv>; Martyn Jones <Martyn1912@outlook.com>; Mohamed Afraz <mohamed.afraz@environment.gov.mv>; Karin Shepardson <kshepardson@worldbank.org>; Bandita Sijapati <bsijapati@worldbank.org>; Anuja Shukla <ashukla7@worldbank.org>; Nadeera Rajapakse <nrajapakse@worldbank.org>; Gangadari Ranawaka <granawaka@worldbank.org>; Josefo Tuyor <jtuyor@worldbank.org>; Christophe Crepin <ccrepin@worldbank.org>; keith.newman@btinternet.com <keith.newman@btinternet.com>

Dear Mokshana,

This is to inform you that the subject case has been resolved and closed. I have given clearance for the contractor to resume their works at Vandhoo starting from today, the 13th of June, upon submission of the following documents, which were subsequently verified by us:

1. Incident report;
2. Corrective actions report/email;
3. Covid19 negative PCR test results and quarantine release notices issued by HPA for all the staff, along with PP and/or Work Permit copies;
4. Signed and stamped company's code of conduct from the contractor;
5. Signed and finger-printed individual code of conducts for all of their project staff.

The code of conducts refers to ESHS, OHS and GBV standards, COVID19 special considerations in civil works contracts, the construction phase ESIA mitigation measures, the implementation of the turtle management plan, and penalties and sanctions that will be imposed incase of non-compliance. Further to this, we have informed the contractor in writing that failure to adhere to our standards and requirements in future may result in the likely termination of their contract.

Additionally, we have also informed Vandhoo resident staff to keep a close eye on the contractor's performance and compliance, and to report to us without delay if a non-compliance is noticed, so corrective actions can be taken immediately.

Best Regards,

On Fri, May 21, 2021 at 5:38 PM Mokshana Nerandika Wijeyeratne <mwijeyeratne@worldbank.org> wrote:

Dear Hassan,

Thanky you for informing us promptly and also the proactive actions. Please keep us posted on status and the actions. These are in line with the guidance from HPA and we hope that things get managed and the cases are negative. This is really unfortunate and wish them all a speedy recovery.

Lets touch base on this at our Mondays SG meeting as well.

Best Wishes

Mokshana

On May 21, 2021, at 5:33 PM, Ahmed Hassaan Zuhair
<ahmed.hassaan@environment.gov.mv> wrote:

[External]

Dear Mokshana and Shanek,

It has come to our attention that a supervisor of LFC constructions Pvt Ltd., one of our contractor's involved in the on-going civil works at Vandhoo RWMF has tested positive for COVID-19 today.

Although this person has not traveled to Vandhoo for quite sometime now, he joined back with their project team on the 17th of May and was apparently staying in the same building as their other staff, who commute daily to Vandhoo from Rasmaadhoo. Rasmaadhoo is the island where their project team is stationed.

And from the information that we have gathered so far, it seems that their staff (who are now assumed as primary contacts) had travelled to Vandhoo yesterday and were seen meeting 5 of Vandhoo WAMCO staff at close range without wearing masks, which is against the safety standards that we have set.

We are investigating this cases further by collecting information from both the sides, and will take the required action if the contractor is found to have majorly breached our safety protocols.

Meanwhile, we have asked the contractor to take the following immediate actions.

1. Provide accurate information to HEOC regarding the positive case and his direct contacts. He is to self isolate / quarantine for the required duration.
2. All of their project staff staying at Rasmaadhoo are required to follow quarantine protocols and adhere to directions given by HEOC. They are to self isolate / quarantine for 14 days and upon completion of the quarantine period should only be released after producing a negative PCR result. The quarantine notice and quarantine release notice of the positive staff and direct contact staff must be submitted to us.
3. They are to temporarily suspend work at Vandhoo until further notice from us. None of their project staff shall enter Vandhoo, prior to submitting the quarantine release notices and the documents being verified and approved by us.
4. Submit an incident report explaining from their side how things have happened. This report should include the corrective actions that they have taken or are going to take against any staff who might have breached the COVID-19 safety protocols.

In addition to these, although HPA do not ask for secondary contacts (contacts of direct contacts) to self isolate nor do they facilitate PCR tests for such contacts, we have also asked the 5 Vandhoo staff who are identified as secondary contacts to self isolate and

monitor for symptoms. They are to stay in isolation from the rest of the staff until they are able to do PCR tests and produce negative results, which Shafiu and Vandhoo management are trying to arrange on special request.

Best Regards,

--

Ahmed Hassaan Zuhair

Environmental and Social Safeguards Specialist

Maldives Clean Environment Project

Ministry of Environment, Green Building, Handhuvaree Hingun, Maafannu, Male', 20392, Maldives.
Office (Direct): +(960) 3018442 | Office (PABX): +(960) 3018300

Email: ahmed.hassaan@environment.gov.mv | Web: www.environment.gov.mv

--

Ahmed Hassaan Zuhair

Environmental and Social Safeguards Specialist

Maldives Clean Environment Project

Ministry of Environment, Green Building, Handhuvaree Hingun, Maafannu, Male', 20392, Maldives.
Office (Direct): +(960) 3018442 | Office (PABX): +(960) 3018300

Email: ahmed.hassaan@environment.gov.mv | Web: www.environment.gov.mv

 Please consider the environment before printing this email.

DISCLAIMER: This email and any files transmitted with it may contain privileged and/or confidential material and is intended solely for the individual(s) or entity to whom they are addressed. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. If you have received this email by mistake please notify the sender immediately. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The recipient should check this email and any attachments for the presence of viruses. The sender nor the Ministry of Environment accepts liability for any damage caused by virus(es) that may have been transmitted with this email or for errors or omissions in the contents of this message.

--

Ahmed Hassaan Zuhair

Environmental and Social Safeguards Specialist

Maldives Clean Environment Project

Ministry of Environment, Green Building, Handhuvaree Hingun, Maafannu, Male', 20392, Maldives.
Office (Direct): +(960) 3018442 | Office (PABX): +(960) 3018300

Email: ahmed.hassaan@environment.gov.mv | Web: www.environment.gov.mv

ANNEX 6

Seawater Quality Test Results

Male' Water & Sewerage Company Pvt Ltd
Water Quality Assurance Laboratory

Quality Assurance Building, 1st Floor, Male' Hingun, Vilimale', Male' City, Maldives
 Tel: +9603323209, Fax: +9603324306, Email: wqa@mwsc.com.mv



LB-TEST-090

WATER QUALITY TEST REPORT
 Report No: 500188660

Customer Information:

Ministry of Environment, Climate Change and Technology
 Green Building
 Male' 20392

Report date: 11/10/2021
 Test Requisition Form No: 900192702
 Sample(s) Received Date: 03/10/2021
 Date of Analysis: 03/10/2021 - 11/10/2021

Sample Description ~	Location 1 R. Vandhoo RWMF Seawater from North East Side	Location 2 R. Vandhoo RWMF Seawater from North West Side	TEST METHOD	UNIT
Sample Type ~	Sea Water	Sea Water		
Sample No	83222546	83222547		
Sampled Date ~	01/10/2021 02:15	01/10/2021 02:40		
PARAMETER	ANALYSIS RESULT			
Physical Appearance	Clear with particles	Clear with particles		
Conductivity *	52100	52300	Method 2510 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	µS/cm
pH *	8.15	8.20	Method 4500-H+ B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	-
Salinity	34.24	34.42	Method 2520 B. (adapted from Standard methods for the examination of water and waste water, 23rd edition)	‰
Temperature	23.1	22.9	Electrometry	°C
Total Dissolved Solids	26000	26200	Electrometry	mg/L
Total Suspended Solids	<5 (LoQ 5 mg/L)	<5 (LoQ 5 mg/L)	HACH Method 8006	mg/L
Turbidity *	0.233	0.631	HACH Nephelometric Method (adapted from HACH 2100N Turbidimeter User Manual)	NTU
Nitrogen Ammonia	<0.02 (LoQ 0.02 mg/L)	<0.02 (LoQ 0.02 mg/L)	HACH Method 8038	mg/L
Sulphate *	2600	2800	HACH Method 8051	mg/L
Phosphate *	<0.05 (LoQ 0.05 mg/L)	<0.05 (LoQ 0.05 mg/L)	HACH Method 8048	mg/L

Keys: µS/cm : Micro Seimen per Centimeter, ‰ : Parts Per Thousand, °C : Degree Celcius, mg/L : Milligram Per Liter, NTU : Nephelometric Turbidity Unit

Checked by

Aminath Sofa
 Laboratory Executive

Approved by

Mohamed Eyman
 Quality Manager

Notes:

Sampling Authority: Sampling was not done by MWSC Laboratory.
 This report shall not be reproduced except in full, without written approval of MWSC.
 This test report is ONLY FOR THE SAMPLES TESTED.
 ~ Information provided by the customer. This information may affect the validity of the test results.
 *Parameters accredited by EIAC under ISO/IEC 17025:2017

***** END OF REPORT *****

Male' Water & Sewerage Company Pvt Ltd
Water Quality Assurance Laboratory

Quality Assurance Building, 1st Floor, Male' Hingun, Vilimale', Male' City, Maldives
 Tel: +9603323209, Fax: +9603324306, Email: wqa@mwsc.com.mv



LB-TEST-090

WATER QUALITY TEST REPORT
 Report No: 500188661

Customer Information:

Ministry of Environment, Climate Change and Technology
 Green Building
 Male' 20392

Report date: 11/10/2021
 Test Requisition Form No: 900192702
 Sample(s) Received Date: 03/10/2021
 Date of Analysis: 03/10/2021 - 11/10/2021

Sample Description ~	Location 3 R. Vandhoo RWMF Seawater from Harbour Basin	TEST METHOD	UNIT
Sample Type ~	Sea Water		
Sample No	83222548		
Sampled Date ~	01/10/2021 03:00		
PARAMETER	ANALYSIS RESULT		
Physical Appearance	Clear with particles		
Total Suspended Solids	<5 (LoQ 5 mg/L)	HACH Method 8006	mg/L
Turbidity *	0.462	HACH Nephelometric Method (adapted from HACH 2100N Turbidimeter User Manual)	NTU

Keys: mg/L : Milligram Per Liter, NTU : Nephelometric Turbidity Unit

Checked by

Aminath Sofa
 Laboratory Executive

Approved by

Mohamed Eyman
 Quality Manager

Notes:

Sampling Authority: Sampling was not done by MWSC Laboratory.
 This report shall not be reproduced except in full, without written approval of MWSC.
 This test report is ONLY FOR THE SAMPLES TESTED.
 ~ Information provided by the customer. This information may affect the validity of the test results.
 *Parameters accredited by EIAC under ISO/IEC 17025:2017

***** END OF REPORT *****

ANNEX 7

Vegetation and Shoreline Map

R. Vandhoo

